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#4

RAW SEQUENCE LISTING

DATE: 12/18/2001

PATENT APPLICATION: US/09/783,338A

TIME: 16:37:40

Input Set : N:\Crf3\RULE60\09783338A.raw

Output Set: N:\CRF3\12182001\I783338A.raw

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:

5 (i) APPLICANT: Glazer, Peter M.
6 Havre, Pamela A.8 (ii) TITLE OF INVENTION: Chemically Modified Oligonucleotide for
9 Site-Directed Mutagenesis

11 (iii) NUMBER OF SEQUENCES: 13

13 (iv) CORRESPONDENCE ADDRESS:

14 (A) ADDRESSEE: Patrea L. Pabst
15 (B) STREET: 1100 Peachtree Street, Suite 2800
16 (C) CITY: Atlanta
17 (D) STATE: Georgia
18 (E) COUNTRY: USA
19 (F) ZIP: 30309-4530

21 (v) COMPUTER READABLE FORM:

22 (A) MEDIUM TYPE: Floppy disk
23 (B) COMPUTER: IBM PC compatible
24 (C) OPERATING SYSTEM: PC-DOS/MS-DOS
25 (D) SOFTWARE: PatentIn Release #1.0, Version #1.25

ENTERED

27 (vi) CURRENT APPLICATION DATA:

C--> 28 (A) APPLICATION NUMBER: US/09/783,338A
C--> 29 (B) FILING DATE: 14-Feb-2001

30 (C) CLASSIFICATION:

32 (vii) PRIOR APPLICATION DATA:

33 (A) APPLICATION NUMBER: 08/083,088
34 (B) FILING DATE: 25-JUN-1993

37 (viii) ATTORNEY/AGENT INFORMATION:

38 (A) NAME: Pabst, Patrea L.
39 (B) REGISTRATION NUMBER: 31,284
40 (C) REFERENCE/DOCKET NUMBER: YU109

43 (ix) TELECOMMUNICATION INFORMATION:

44 (A) TELEPHONE: (404)-815-6508
45 (B) TELEFAX: (404)-815-6555

47 (2) INFORMATION FOR SEQ ID NO: 1:

49 (i) SEQUENCE CHARACTERISTICS:

50 (A) LENGTH: 11 base pairs
51 (B) TYPE: nucleic acid
52 (C) STRANDEDNESS: single
53 (D) TOPOLOGY: linear

55 (ii) MOLECULE TYPE: DNA (genomic)

57 (iii) HYPOTHETICAL: NO

59 (iv) ANTI-SENSE: NO

61 (ix) FEATURE:

62 (A) NAME/KEY: misc_feature

63 (B) LOCATION: 1..11

64 (D) OTHER INFORMATION: /function= "N is

65 4'-hydroxymethyl-4,5',8-trimethylpsoralen"

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67 (x) PUBLICATION INFORMATION:
68 (A) AUTHORS: Glazer, Peter M.
69 Havre, Pamela A.
70 (K) RELEVANT RESIDUES IN SEQ ID NO:1: FROM 1 TO 11
72 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
74 NAGGAAGGGG G 11
80 (2) INFORMATION FOR SEQ ID NO: 2:
82 (i) SEQUENCE CHARACTERISTICS:
83 (A) LENGTH: 10 base pairs
84 (B) TYPE: nucleic acid
85 (C) STRANDEDNESS: single
86 (D) TOPOLOGY: linear
88 (ii) MOLECULE TYPE: DNA (genomic)
90 (iii) HYPOTHETICAL: NO
92 (iv) ANTI-SENSE: NO
94 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
96 AGGAAGGGG 10
98 (2) INFORMATION FOR SEQ ID NO: 3:
100 (i) SEQUENCE CHARACTERISTICS:
101 (A) LENGTH: 10 base pairs
102 (B) TYPE: nucleic acid
103 (C) STRANDEDNESS: single
104 (D) TOPOLOGY: linear
106 (ii) MOLECULE TYPE: DNA (genomic)
108 (iii) HYPOTHETICAL: NO
110 (iv) ANTI-SENSE: NO
112 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
114 GGGGAAAGGA 10
117 (2) INFORMATION FOR SEQ ID NO: 4:
119 (i) SEQUENCE CHARACTERISTICS:
120 (A) LENGTH: 8 base pairs
121 (B) TYPE: nucleic acid
122 (C) STRANDEDNESS: single
123 (D) TOPOLOGY: linear
125 (ii) MOLECULE TYPE: DNA (genomic)
127 (iii) HYPOTHETICAL: NO
129 (iv) ANTI-SENSE: NO
131 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
133 CCCCTTC 8
135 (2) INFORMATION FOR SEQ ID NO: 5:
137 (i) SEQUENCE CHARACTERISTICS:
138 (A) LENGTH: 11 base pairs
139 (B) TYPE: nucleic acid
140 (C) STRANDEDNESS: single
141 (D) TOPOLOGY: linear
143 (ii) MOLECULE TYPE: DNA (genomic)
145 (iii) HYPOTHETICAL: NO
147 (iv) ANTI-SENSE: NO
149 (ix) FEATURE:

RAW SEQUENCE LISTING DATE: 12/18/2001
 PATENT APPLICATION: US/09/783,338A TIME: 16:37:40

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150      (A) NAME/KEY: misc_feature
151      (B) LOCATION: 1..11
152      (D) OTHER INFORMATION: /function= "N is
153 4'-hydroxymethyl-4,5',8-trimethylpsoralen"
154      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
155 NGGGGGAAGG A                                11
156
157 (2) INFORMATION FOR SEQ ID NO: 6:
158      (i) SEQUENCE CHARACTERISTICS:
159          (A) LENGTH: 18 base pairs
160          (B) TYPE: nucleic acid
161          (C) STRANDEDNESS: single
162          (D) TOPOLOGY: linear
163      (ii) MOLECULE TYPE: DNA (genomic)
164      (iii) HYPOTHETICAL: NO
165      (iv) ANTI-SENSE: NO
166      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
167 GTTCTGAATC CTTCCCCC                                18
168
169 (2) INFORMATION FOR SEQ ID NO: 7:
170      (i) SEQUENCE CHARACTERISTICS:
171          (A) LENGTH: 18 base pairs
172          (B) TYPE: nucleic acid
173          (C) STRANDEDNESS: single
174          (D) TOPOLOGY: linear
175      (ii) MOLECULE TYPE: DNA (genomic)
176      (iii) HYPOTHETICAL: NO
177      (iv) ANTI-SENSE: NO
178      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
179 GTTTCGAAAC CTTCCCCC                                18
180
181 (2) INFORMATION FOR SEQ ID NO: 8:
182      (i) SEQUENCE CHARACTERISTICS:
183          (A) LENGTH: 35 base pairs
184          (B) TYPE: nucleic acid
185          (C) STRANDEDNESS: single
186          (D) TOPOLOGY: linear
187      (ii) MOLECULE TYPE: DNA (genomic)
188      (iii) HYPOTHETICAL: NO
189      (iv) ANTI-SENSE: NO
190      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
191 TGGTGGTGGG GGAAGGATTG GAACCTTCGA AGTCG          35
192
193 (2) INFORMATION FOR SEQ ID NO: 9:
194      (i) SEQUENCE CHARACTERISTICS:
195          (A) LENGTH: 35 base pairs
196          (B) TYPE: nucleic acid
197          (C) STRANDEDNESS: single
198          (D) TOPOLOGY: linear
199      (ii) MOLECULE TYPE: DNA (genomic)
200      (iii) HYPOTHETICAL: NO
201      (iv) ANTI-SENSE: NO
202      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
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Input Set : N:\Crf3\RULE60\09783338A.raw
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233 CGACTTCGAA GGTCGAATC CTTCCCCAC CACCA 35
 235 (2) INFORMATION FOR SEQ ID NO: 10:
 237 (i) SEQUENCE CHARACTERISTICS:
 238 (A) LENGTH: 121 base pairs
 239 (B) TYPE: nucleic acid
 240 (C) STRANDEDNESS: single
 241 (D) TOPOLOGY: linear
 243 (ii) MOLECULE TYPE: DNA (genomic)
 245 (iii) HYPOTHETICAL: NO
 247 (iv) ANTI-SENSE: NO
 249 (ix) FEATURE:
 250 (A) NAME/KEY: misc_feature
 251 (B) LOCATION: 1..60
 252 (D) OTHER INFORMATION: /function= "At positions 16 and 57,
 253 N is G or T."
 255 (ix) FEATURE:
 256 (A) NAME/KEY: misc_feature
 257 (B) LOCATION: 1..121
 258 (D) OTHER INFORMATION: /function= "At position 17, N is A,
 259 G or T."
 261 (ix) FEATURE:
 262 (A) NAME/KEY: misc_feature
 263 (B) LOCATION: 1..121
 264 (D) OTHER INFORMATION: /function= "At position 18, N is A,
 265 C or T."
 268 (ix) FEATURE:
 269 (A) NAME/KEY: misc_feature
 270 (B) LOCATION: 1..121
 271 (D) OTHER INFORMATION: /function= "At position 20, N is G
 272 or A."
 274 (ix) FEATURE:
 275 (A) NAME/KEY: misc_feature
 276 (B) LOCATION: 1..121
 277 (D) OTHER INFORMATION: /function= "At position 24, N is C
 278 or T."
 280 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
 282 TGGTGGTGGG GGAAGNNNTN GAANCTCGA AGTCGATGAC GGCAGATTAA GAGTCTNCTC 60
 284 CCTTTGGCCG CTCGGGAACC CCACCACAGG TAATGCTTT ACGGGGCGCA TCATATCAA 120
 286 T 121
 288 (2) INFORMATION FOR SEQ ID NO: 11:
 290 (i) SEQUENCE CHARACTERISTICS:
 291 (A) LENGTH: 121 base pairs
 292 (B) TYPE: nucleic acid
 293 (C) STRANDEDNESS: single
 294 (D) TOPOLOGY: linear
 296 (ii) MOLECULE TYPE: DNA (genomic)
 298 (iii) HYPOTHETICAL: NO
 300 (iv) ANTI-SENSE: NO
 302 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/783,338A

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Input Set : N:\Crf3\RULE60\09783338A.raw
Output Set: N:\CRF3\12182001\I783338A.raw

304 ATTTGATATG ATGCCCGGG TAAAAGCATT ACCTGTGGTG GGGTTCCCGA GC GGCCAAAG 60
306 GGAGCAGACT CTAAATCTGC CGTCATCGAC TTCGAAGGTT CGAATCCTTC CCCCACCACC 120
308 A 121
310 (2) INFORMATION FOR SEQ ID NO: 12:
312 (i) SEQUENCE CHARACTERISTICS:
313 (A) LENGTH: 121 base pairs
314 (B) TYPE: nucleic acid
315 (C) STRANDEDNESS: single
316 (D) TOPOLOGY: linear
318 (ii) MOLECULE TYPE: DNA (genomic)
320 (iii) HYPOTHETICAL: NO
322 (iv) ANTI-SENSE: NO
325 (ix) FEATURE:
326 (A) NAME/KEY: misc_feature
327 (B) LOCATION: 1..121
328 (D) OTHER INFORMATION: /function= "At position 7, N is G
329 or T."
331 (ix) FEATURE:
332 (A) NAME/KEY: misc_feature
333 (B) LOCATION: 1..121
334 (D) OTHER INFORMATION: /function= "At positions 12, 20 and
335 117, N is C or G."
337 (ix) FEATURE:
338 (A) NAME/KEY: misc_feature
339 (B) LOCATION: 1..121
340 (D) OTHER INFORMATION: /function= "At positions 15, 16,
341 21, 29, 78, 83 and 108, N is A or G."
342 (ix) FEATURE:
343 (A) NAME/KEY: misc_feature
344 (B) LOCATION: 1..121
345 (D) OTHER INFORMATION: /function= "At positions 18, 49,
346 68, 69, and 107, N is C or T."
347 (ix) FEATURE:
348 (A) NAME/KEY: misc_feature
349 (B) LOCATION: 1..121
350 (D) OTHER INFORMATION: /function= "At position 114, N is
351 C, T or A."
353 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
355 TGGTGGNGGG GNAANNANTN NAACCTTCNA AGTCGATGAC GGCAGATTNN GAGTCTNCTC 60
357 CCTTTGGNNNG CTCGGGANCC CCNCCACAGG TAATGCTTT ACGGGGNNCA TCANNTNAAA 120
359 T 121
362 (2) INFORMATION FOR SEQ ID NO: 13:
364 (i) SEQUENCE CHARACTERISTICS:
365 (A) LENGTH: 121 base pairs
366 (B) TYPE: nucleic acid
367 (C) STRANDEDNESS: single
368 (D) TOPOLOGY: linear
370 (ii) MOLECULE TYPE: DNA (genomic)
372 (iii) HYPOTHETICAL: NO

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/783,338A

DATE: 12/18/2001

TIME: 16:37:41

Input Set : N:\Crf3\RULE60\09783338A.raw
Output Set: N:\CRF3\12182001\I783338A.raw

L:28 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:29 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]